

Title (en)
Smart probe apparatus with automatic self-adjustment of an oscilloscope's bandwidth

Title (de)
Intelligentes Prüfsondengerät mit Selbstjustierung der Bandbreite eines Oszilloskops

Title (fr)
Sonde de test intelligente avec auto-réglage de la largeur de bande d'un oscilloscope

Publication
EP 1209472 A2 20020529 (EN)

Application
EP 01309532 A 20011112

Priority
US 71871800 A 20001122

Abstract (en)
The invention involves storing information about the probe frequency response in the probe itself. The information preferably consists of a set of one or more characteristic frequency response data points. Each data point includes at least the gain of the probe at a given frequency. More preferably, each data point includes the complex transfer characteristic of a probe (S21 in Fig. 2) and optionally the complex output reflectivity of the probe (S22 in Fig. 2) and the frequency (F in Fig. 2) at which the data applies. A variable number of frequency points can be stored, as necessary, to adequately describe the probe's response. The probe also preferably stores a header containing the number of stored data points. The invention readily extends to probes having multiple gain settings or multiple bandwidth settings, by simply storing multiple sets of S21, S22 and F data. When the probe is attached to a scope, the scope reads the frequency response information from the probe in accordance with any suitable communications format and protocol. Using information about its own frequency response and input voltage standing wave ratio (VSWR), the scope undertakes to adjust its frequency response (by which is meant to add or subtract gain at high frequency), thereby compensating for the frequency response of the probe and optimizing overall system frequency response. <IMAGE>

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